

# Cleveland Gas Systems, LLC

## Gas Transfer System

“Changing the way industry combines and separates gases and liquids”

18th INDUSTRY GROWTH FORUM  
November 2005

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# Cleveland Gas Systems



- Who We Are:

- Commercial process equipment company

- What We Do:

- Design and manufacturer a highly efficient process improvement product call the GasTran<sup>TM</sup>
- Technology combines or separate liquids and gases

- We Are Not:

- A research or consulting company

# GasTran can...

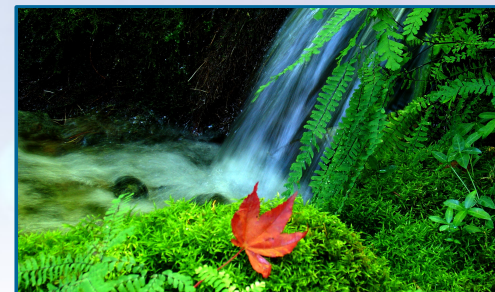


- Improve beverage quality & bottling
- Reduce boiler maintenance
- Reclaim oil used in industrial process
- Improve oil well production
- Remove gasoline from ground water

# GasTran: What does it do?

- Uses mechanical forces to separate or combine gases & liquids
  - Deaeration or gas removal
    - Less than 2 part per billion with gas stripping
  - Aeration or gas diffusion
    - 100% saturation of liquid with oxygen, ozone and CO<sub>2</sub>
  - Emulsification
    - Produces stable emulsions by dispersing fine solid particles or organic materials into a liquid
- Reduces required size

# GasTran: How it works



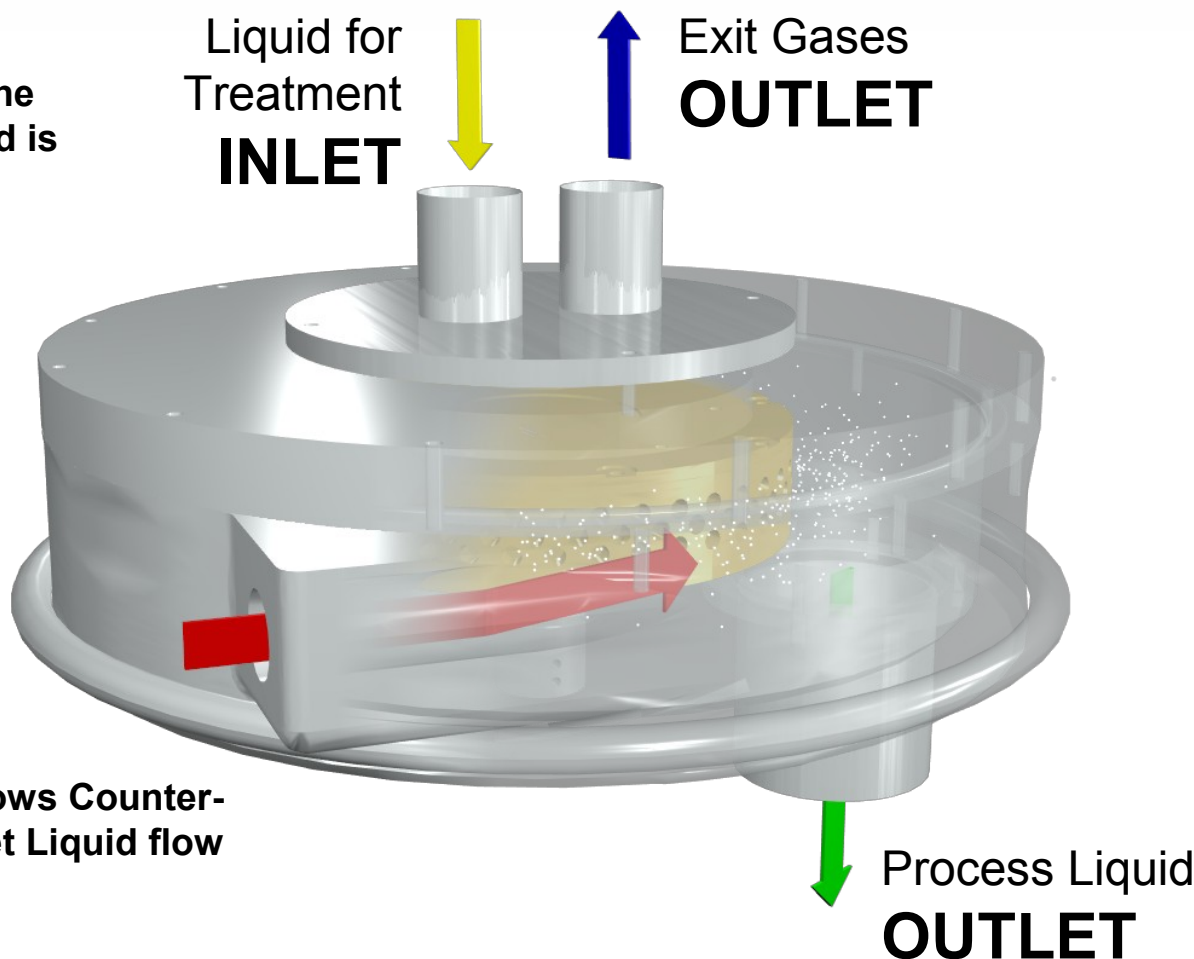
Liquid flows into the Spinning Rotor and is sheared into fine droplets allowing gases to be evacuated with stripping medium

Liquid for Treatment  
**INLET**

Exit Gases  
**OUTLET**

Gas  
**INLET**

Stripping Gas Flows Counter-current to Inlet Liquid flow





# Commercial Products



**Model HP-B**



**Model HP-A**

# Application Focus



Many Potential Applications	Applications Experience 2005	Top Applications for 2006/2007
<b>Separation</b> <ul style="list-style-type: none"> <li>• Deaeration – water <ul style="list-style-type: none"> <li>• Boilers</li> <li>• Beverage</li> <li>• Oil Field</li> </ul> </li> <li>• Stripping – VOC (MTBE)</li> <li>• Distillation</li> <li>• Oil Dehydration</li> <li>• H<sub>2</sub>S Removal</li> <li>• De-sulfurization</li> </ul> <b>Combination</b> <ul style="list-style-type: none"> <li>• Aeration</li> <li>• Emulsification</li> <li>• Ozonation</li> <li>• CO<sub>2</sub></li> <li>• Chemical &amp; Bio-chemical Reaction</li> <li>• Absorption &amp; Desorption</li> </ul>	<b>Separation</b> <ul style="list-style-type: none"> <li>• Deaeration – water <ul style="list-style-type: none"> <li>• Boilers</li> <li>• Beverage</li> <li>• Oil Field</li> </ul> </li> <li>• Stripping – VOC (MTBE)</li> <li>• Distillation</li> <li>• Oil Dehydration</li> </ul> <b>Combination</b> <ul style="list-style-type: none"> <li>• Aeration</li> <li>• Emulsification</li> <li>• Ozonation</li> <li>• CO<sub>2</sub></li> </ul>	<b>Separation</b> <ul style="list-style-type: none"> <li>• Deaeration – water <ul style="list-style-type: none"> <li>• Boilers</li> <li>• Beverage</li> <li>• Oil Field</li> </ul> </li> <li>• Distillation</li> </ul> <b>Combination</b> <ul style="list-style-type: none"> <li>• Aeration</li> <li>• Ozonation</li> <li>• CO<sub>2</sub></li> </ul>

Goal: Continue to narrow scope of application testing, development and sales

# Market Applications



- Water deaeration
  - Industrial boilers
  - Beverages
  - Secondary oil recovery
- Industrial Wastewater Treatment
  - Removal of volatile organic compounds (VOC's)
  - Ozonation
- Gas recovery from viscous fluids
  - Biodiesel
  - Ethanol

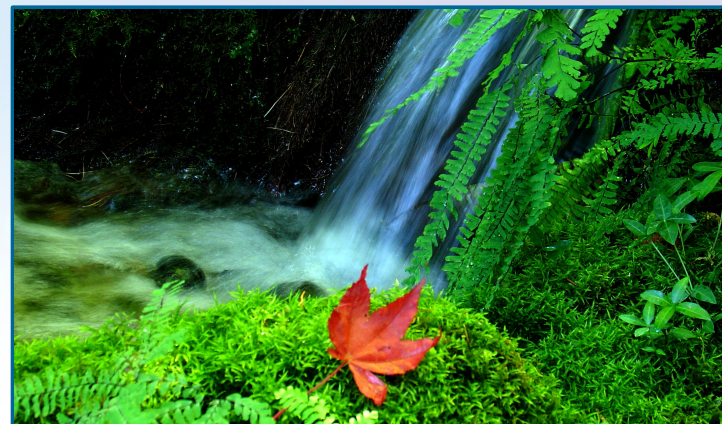


# Summary



- Commercial Product
- Management Team
- Evolving Market Focus
- Initial Customers
- Growing Pipeline

# Contact



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